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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WILDER, CYNTHIA B	

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,407	ASAI ET AL.	
	Examiner	Art Unit	
	Cynthia B. Wilder, Ph.D.	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/7/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FINAL ACTION

1. Applicant's amendment filed on June 7, 2004 is acknowledged and has been entered. Claims 1, 3, 5-11 have been amended. Claim 4 has been canceled. Claims 13-23 have been added. Claims 1-3, 5-23 are pending. All of the amendments and arguments have been thoroughly reviewed and considered but are not found persuasive for the reasons discussed below. Any rejection not reiterated in this action has been withdrawn as being obviated by the amendment of the claims.

This action is made FINAL.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Previous Objections and Rejections

3. The claim objection directed to claims 4-10 under 37 CFR 1.75(c) is withdrawn in view of Applicant's amendment to the claims. The prior art rejection under 35 USC 102(b) directed to claims 1 and 2 as being anticipated by Nagata et al is withdrawn in view of Applicant's amendment to claim 1. The prior art rejection under 35 USC 102(b) directed to claims 1-2 as being anticipated by Coghlam et al is withdrawn in view of Applicant's amendment to claim 1. The prior art rejection under 35 USC 102(b) directed to claims 1-2, 11 and 12 as being anticipated by Toran-Allcrand is maintained and discussed below. The prior art rejection under 35 USC 102(e) directed to claims 1 and 3 as being anticipated by Joly et al is maintained and discussed below. The prior art rejection under 35 USC 103(a) directed to claim 3 as being unpatentable over Ness et al is withdrawn in view of Applicant amendment of claim 1 and arguments.

Claim Rejections - 35 USC § 102

4. Once again, claims 1, 2, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Toran-Allerand (US 5,990,078, November 23, 1999). Regarding claim 1, 2, 11, Toran-Allerand teach a method of monitoring gene expression which comprises collecting cell sample from a organism each before occurrence, and after occurrence of an event, performing in situ hybridization in respect of each sample using a probe that specifically hybridizes with mRNA and examining changes in localization of the cell (col. 13, lines 24-65), wherein the function of the mRNA is unknown and wherein the expression of the mRNA changes in response to an event (col. 13, lines 24-46).

Regarding claim 12, Toran-Allerand teaches the embodiment of claim 1, wherein a cell sample is collected from an organism at least two different points in time after occurrence of an event (col.13, lines 24-65 and col. lines 13-17; see also col. 3, lines line 56 to col. 4, lines 31). Therefore, Toran-Allerand meets the limitations of claims 1, 2, 11 and 12 of the instant invention.

Applicant's Traversal

5. Applicant traverses the rejections on the following grounds: Applicants assert that Toran-Allerand describes a method of increasing the level of estrogen receptors in neural tissue of a subject. Applicants state that Toran-Allerand describes the use of *in situ* hybridization histochemistry to identify estrogen receptor mRNA in PC12 cells both before and after long term exposure to nerve group factor. Applicants assert that the hybridization product described in Toran-Allerand is estrogen receptor mRNA, whose sequence and function are already known. Applicants contend that in contrast the claimed method relates to the identification of a gene of unknown function. Applicants

state that additionally, Toran-Allerand does not teach or suggest estimating a function of the gene with previously unknown function (amended claim 11). Applicants assert that Toran-Allerand et al does not teach or suggest screening genes of unknown function to identify genes whose expression and localization change in response to an event as target for drug development (new claim 13). Additionally Applicants assert that Toran-Allerand et al does not teach or suggest the use of a DNA chip or DNA microarray (amended claim 3 and new claim 15). Applicant contends that Toran-Allerand also fails to teach or suggest the studying of at lest two different mRNAs and/or expression sequence tags in one screening (amended claim 6 and new claim 17) or the studying of a mRNA and/or expression sequence tag in at least two types of different tissues or cells (amended claim 7 and new claim 18). Applicants assert that Toran et al further fails to teach or suggest the collection of tissue or cell samples from the organism at two or more different points in time after occurrence of an event (amended claim 12 and new claim 22). Finally, Applicants contend that Toran-Allerand is silent on the event being ischemia or cancer. Applicants assert that the present invention is novel and nonobvious over Toran-Allerand, and the rejections based on this reference cannot stand and must be withdrawn.

Examiner's Response

6. Applicants' arguments filed on June 7, 2004 have been thoroughly reviewed and considered but they are not found persuasive for the reasons that follow: The Examiner acknowledges Applicant argues but notes that the arguments are based on the claims as amended and the newly submitted claims. Nonetheless, contrary to Applicant arguments the Examiner maintains that the reference of Toran-Allerand meets the limitations of the

claims as broadly written. Additionally, the claims as now amended are vague and confusing because it cannot be determined how the limitation after the "wherein" clause as recited in the claims further limit the steps of performing *in situ* hybridization and examining localization because the claims do not set forth any method steps which measures any expression levels, nor is there any indication or suggestion that an event has occur which would affect any expression levels. Additionally, in response to Applicant's arguments that Toran-Allerand does not teach the identification of a gene of unknown function, the Examiner respectfully disagree. While Toran-Allerand et al note that the mRNA is an estrogen receptor, the function of the estrogen receptor mRNA and neurotrophin receptor in reciprocal regulation in response to an event (treatment with ligand) is unknown and is the target of investigation by Toran-Allerand et al. Based on the investigation using *in situ* hybridization and localization as required by the instant invention, Toran-Allerand et al determines reciprocal regulation of the estrogen receptor and neurotrophin receptor and concludes that they play a role in processes governing neural maturation and the maintenance of neural function (col. 13, lines 24-46). Thus, the function of the estrogen receptor mRNA in reciprocal regulation was unknown, investigated and finally elucidated by Toran-Allerand et al. It is further noted that Applicants' specification discloses that "an unknown function" or "function of which is unknown" refers to any of physico-chemical function, biochemical function or physiological function having not been analyzed. The specification a page 3 provides examples of what encompasses a function on a "physicochemical level", a function on a "biochemical level and a function on a "physiological level". The specification states that a function on a "physiological level" includes roles in organisms, tissues or cells.

Thus contrary to Applicant's arguments, Applicants' specification supports the Examiner's allegation of anticipation by Toran-Allerand et al because Toran-Allerand et al disclose the discovery of an unknown physiological function of the estrogen receptor mRNA in cell samples.

In response to applicant's argument that the references does not teach or suggest estimating a function of the gene with previously unknown function as recited in amended claim 11. It is noted that Applicant's claims as written are vague and confusing and does not require a step of estimating a function of a gene with previously unknown function. Specifically, the claims do not set forth any steps which would indicate or result in the estimation of a function of a gene. There is no nexus between the step of examining localization of mRNA and/or expression sequence tag and the goal of estimating the function of a gene or determining the function or an unknown function of a gene. The courts have established that during patent examination, the claims must be interpreted broadly as reasonably allow *(In re Zletz, 893 F.2d321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).* In this case, given the broadest reasonable, interpretation of the claims as written, Toran-Allerand meets limitation of the rejected claims.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., identifying genes whose expression and localization change in response to an event as targets for drug development; use of DNA chip or DNA microarray; event being ischemia or cancer; or studying a mRNA and/or expression sequence tag in at least two types of different tissues or cells) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are

not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to Applicant's arguments that the reference does not teach or suggest the collection of tissue or cells samples from the organisms at two or more different points in time after occurrence of an event, the Examiner maintains that the Toran-Allerand et al meets this limitation. Specifically, Toran-Allerand teaches wherein cells are collected before and after long term-exposure to the ligand NGF. The reference further teaches wherein cells were exposed long-term (greater than 2 weeks) to the ligand NGF and were further exposed to the compound, estradiol for 1, 3 or 7 days. Cells were then collected and analyzed after treatment for 1, 3 and 7 days (multiple time points after and event) (col. 15, lines 13-38). Applicant's amendment and arguments are not sufficient to overcome the prior art rejections under 35 USC 102(b). Accordingly, the rejections are maintained.

Claim Rejections - 35 USC § 102

7. One again, claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Joly et al (US 6,342,495 B1, filing date December 15, 1999). Regarding claims 1 and 3, Joly et al teach a method of screening comprising performing in situ hybridization of a tissue sample of an organism using a probe which hybridizes specifically with mRNA and examining the localization of the mRNA. The reference further teaches wherein the mRNA is confirmed with a DNA microarray (col. 20, lines 41-67 and col. 21, line 1-3). Therefore, Joly et al meet the limitations of claims 1 and 3 of the instant invention.

Applicant's traversal

8. Applicant traverses the rejection on the following grounds: Applicant asserts that the Joly et al describes the use of agonist and antagonists of peripheral-type benzodiasepine receptors in the diagnosis and treatment of cardiac hypertrophy and other circulatory conditions. Applicant states that Joly et al describes the use of *in situ* hybridization histochemistry to examine CVB3 viral RNA localization using digoxigenin-labeled, CVB3 strand-specific ribo-probes and use of microarry, analysis for assessment of differentially expressed genes that encodes 1-8U, prostacyclin-stimulating factor, osf-2, tissue specific mRNA, insulin-like growth factor binding protein, 6, OSD-1, gas-1, YMP, BTG2, pre-B cells stimulating factor homolog, peripheral-type benzodiazepine receptor and cellular ligand of annexin, the sequence and activities of all of which were already known. Applicant states that in contrast, the claimed method relates to the identification of a gene of unknown function. Applicant asserts that additionally, Joly et al does not teach or suggest estimating a function of the gene with previously unknown function (amended claim 11). Applicants assert that Joly et al does not teach or suggest screening genes of unknown function to identify genes whose expression and localization change in response to an event as target for drug development (new claim 13). Applicant contends that Joly et al also fails to teach or suggest the studying of at lest two different mRNAs and/or expression sequence tags in one screening (amended claim 6 and new claim 17) or the studying of a mRNA and/or expression sequence tag in at least two types of different tissues or cells (amended claim 7 and new claim 18). Applicants assert that Toran et al further fails to teach or suggest the collection of tissue or cell samples from the organism at two or more different points

in time after occurrence of an event (amended claim 12 and new claim 22). Finally, Applicants contend that Joly et al is silent on the event being ischemia or cancer. Applicants assert that the present invention is novel and nonobvious over Joly et al, and the rejections based on this reference be withdrawn.

Examiner's Response

9. Applicants' arguments filed on June 7, 2004 have been thoroughly reviewed and considered but they are not found persuasive for the reasons that follow: The Examiner acknowledges Applicant argues but notes that the arguments are based on the claims as amended and the newly submitted claims. Nonetheless, contrary to Applicant arguments the Examiner maintains that the reference of Joly et al meets the limitations of the claims as broadly written. As noted earlier, the claims as now amended are vague and confusing because it cannot be determined how the limitations after the "wherein" clause as recited in the claims further limit the steps of performing *in situ* hybridization and examining localization because the claims do not set forth any method steps which measures any expression levels, nor is there any indication or suggestion that an event has occur which would affect any expression levels. Additionally, in response to Applicant's arguments that Joly et al does not teach the identification of a gene of unknown function, the Examiner respectfully disagree because the target of Joly et al investigation was to determine the role (physiological function) of unidentified (unknown) genes in response to an event, e.g., myocardial infarction. Joly et al discloses that the microarray included 30,000 unindentified (unknown) genes and a set of known clones. Joly et al further teach that the microarray analysis of DNA obtained from the disease models were

sequenced and compared to known human genes (col. 25, lines 32-40), thus indicating the identification of genes with unknown function in response to an event; in this case, myocardial infarction in rat tissues. Joly et al were able to conclude that the identified genes based on known genes play a significant role in cardiac hypertrophy, viral myocarditis, and myocardial infarction. Additionally, as previously noted above, Applicants' specification defines one type of function as a function on a physiological level and states that such a function includes role in organisms, tissues or cells, which supports Joly's investigation. Like Joly et al, Applicants' specification further provides genes with known function, such as, e.g., c-jun, Heat shock 70 gene, TATase gene, etc., to identify unidentified (unknown) genes or to determine additional functions of said known genes (see examples beginning at page 21). Therefore, Joly et al meets this limitation.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., estimating a function of the gene with previously unknown function, identifying genes whose expression and localization change in response to an event as targets for drug development; event being ischemia or cancer; or studying a mRNA and/or expression sequence tag in at least two types of different tissues or cells) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant's amendment and arguments are not sufficient to overcome the prior art rejections under 35 USC 102(e). Accordingly, the rejections are maintained.

New Ground(s) of Rejections

THE NEW GROUND(S) OF REJECTIONS WERE NECESSITATED BY APPLICANT'S AMENDMENT OF THE CLAIMS:

Claim Rejections - 35 USC § 112

10 The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-3, 5-12 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claims 1-3 and 5-10 are vague and indefinite at the phrase "wherein the function of the gene and/or expression sequence tag is unknown and wherein the expression level of the mRNA and/or expression sequence tag changes in response to the event" as recited in claims 1 because it cannot be determined how the limitations after the "wherein" clause as recited in the claims further limit the steps of performing *in situ* hybridization and examining localization. No clear relationship can be determined between the method steps and the limitations after the "wherein" clause because the claims do not set forth any method steps which measures any expression levels, nor is there any indication or suggestion that an event has occur which would affect any changes in any expression levels. In other words, the claims lack proper antecedent basis since no step of measuring expression level is performed and no event previously identified. Clarification is required.

(b) Claims 3 and 15 are indefinite at the phrase "such as" because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

(c) Claim 8 is confusing at the phrase "used for screening of a gene encoding a substance effective as a drug" because it is unclear how one is to establish whether a gene encodes a substance effective as a drug when the function of the gene is unknown. It cannot be determined how one arrives at the conclusion that a gene of unknown function encodes a substance effective as a drug using the method steps recited in claim 1. Clarification is required.

(d) Claims 11-12 are vague and indefinite at the recitation of "estimating a function of the gene" because the claims do not set forth any steps which would indicate or result in the estimation of a function of a gene. There is no nexus between the step of examining localization of mRNA and/or expression sequence tag and the goal of estimating the function of a gene or determining the function of or an unknown function of a gene. Clarification is required.

(e) Claims 11 and 12 are vague and confusing at the phrase "wherein the function of the gene and/or expression sequence tag is unknown and wherein the expression level of the mRNA and/or expression sequence tag changes in response to an event" as recited in claims 11 because it cannot be determined how the limitations after the "wherein" clause further limit the steps of performing *in situ* hybridization and examining localization because the claims do not set forth any method steps which measures any expression levels. Thus it cannot be determined whether a change in the expression level of the mRNA is a property of the mRNA or based on a separate step. Clarification is required.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 6-8, 13-14, 17-19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Toran-Allerand (US 5,990,078, November 1999). Regarding claim 6, Toran-Allerand teaches the method according to claim 1 as discussed above at #4, wherein localization of at lest two types of different mRNA (trkA mRNA and the $p75^{NGFR}$ mRNA) is examined in one type of tissue or cell (PC12 cells) in a single screening (col. 13, lines 24-46).

Regarding claim 7, Toran-Allerand teach the method of claim 1, wherein localization of one type of mRNA is examined in at least two different cells (naive cells and NGF treated cells (col. 13, line 48). Toran-Allerand discloses that these cells differ both in morphology and cytoplasmic content.

Regarding claim 8, Toran-Allerand teaches the method of claim 1, used for screening gene encoding a substance effective as a drug (col. 1, lines 37-39).

Regarding claims 13 and 21, Toran-Allerand teaches a method comprising the steps of examining the expression of an mRNA before and after and event, determining those mRNA whose expression has changed in response to the event, designing a probe that will specifically hybridized with the mRNA whose expression has changed in response to the event, performing in situ hybridization of a cell sample before and after the event by using the probe designed above, examining localization of the mRNA in the cell before and after the event, determining those mRNA whose localization has changed in response to the event and identifying the mRNA whose expression and localization (ratio) have changed in response to the event as target for drug development, wherein one function of the gene is unknown before the screening (col. 13, line 24 to col. 15, line 61 and col. 16, lines 12-16).

Regarding claim 14, Toran-Allerand teaches method the method according to claim 13, wherein the mRNA is expressed in cells (col. 13, lines 48-49).

Regarding claim 17, Toran-Allerand teaches the method according to claim 13, wherein localization of at lest two types of different mRNA (trkA mRNA and the $p75^{NGFR}$ mRNA) is examined in one type of tissue or cell (PC12 cells) in a single screening (col. 13, lines 24-46).

Regarding claim 18, Toran-Allerand teaches the method according claim 13, wherein localization of one type of mRNA is examined in at least two different cells (naive cells and NGF treated cells) (col. 13, line 48). Toran-Allerand discloses that these cells differ both in morphology and cytoplasmic content.

Regarding claim 19, Toran-Allerand teaches a method according claim 13, wherein the gene encodes a substance effective as a drug (col. 1, lines 37-39).

Regarding claim 22, Toran-Allerand teaches a method according to claim 13, wherein the tissue sample is collected form an organism at two or more different points in time after occurrence of an event (col. 15, lines 13-38). Therefore, Toran-Allerand et al meets the limitations of claims 6-8, 13-14, 17-22 of the instant invention.

14. Claims 5, 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Joly et al. (US 6,342495 B1, filing date December 15, 1999). Regarding claim 5, Joly et al teach a method according to claim 1 as discussed above at # 7, wherein the gene has been cloned (col. 22, lines 23-29).

Regarding claim 7, Joly et al teach the method according to claim 1, wherein localization of one type of mRNA is examined in at least two types of different tissues or cells (left ventricle heart tissue and septum tissue) (col. 21, lines 6-9 and line 59-61).

Regarding claim 8, Joly et al teach the method according to claim 1 used for screening of a gene (peripheral-type benzodiazepine receptor (PTBR) encoding a substance effective as a drug (col. 25, lines 38-46) and (col. 7, lines 1-16).

Regarding claim 9, Joly et al teach the method according to claim 1, used for screening of a gene related to a disease (cardiac disease) (col. 19, line 46 to col. 20, line 67).

Regarding claim 10, Joly et al teach the method according to claim 1, used for examining the function of a gene or expression sequence tag that has been cloned but which is of unknown function (col. 22, lines 23 to col. 23, line 57 and col. 26, lines 33-37).

15. Claims 13-16, 18-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Gonzalez-Zulueta et al (US 6,670,138 B2, effective filing date November 1, 2000). Regarding claim 13, Gonzalez-Zulueta et al teach a method of screening to identify a gene as a target for drug development which comprises: (a) examining the expression of an mRNA before and after an event, (b) determining those mRNA whose expression has change in response to an the event, (c) designing a probe that will specifically hybridize with the mRNA whose expression has changed in response to the event, (d) performing *in situ* hybridization of a tissue or cell sample of an organism before and after the event by using the probe designed in step (c), (e) examining the localization of the mRNA in the tissue or cell before and after the event (f) determining those mRNA whose localization has changed in response to the event and (g) identifying those mRNAs whose expression and localization have both changed in response to the vent as targets for drug development, wherein one function of the gene is unknown before screening (see col. 19, line 64 to col. 20, line 50; col. 23, lines 31-38 and lines 62 to col. 24, line 14, 46-52; see especially col. 37, lines 6-64).

Regarding claim 14, Gonzalez-Zulueta et al teach the method of claim 13, wherein the mRNA is expressed in cultured cells or tissue (Col. 24, lines 46-52).

Regarding claim 15, Gonzalez-Zulueta et al teach the method of claim 13, wherein the expression of the mRNA is confirmed with a microarray

Regarding claim 16, Gonzalez-Zulueta et al teach the method of claim 13, wherein the gene has been cloned (col. 31, lines 63-64).

Regarding claim 18, Gonzalez-Zulueta et al teach the method of claim 13, wherein the localization and expression of one type of mRNA are determined in at lest two types of tissues or cells (brain slices and neuronal cultures) (col. 37, lines 6-64).

Regarding claim 19, Gonzalez-Zulueta et al teach the method of claim 13, wherein the gene encodes substances effective as a drug (col. 2, lines 9-25 and col. 34, lines 12-14).

Regarding claim 20, Gonzalez-Zulueta et al teach the method of claim 13, wherein the gene is related to a disease (neurological disorders or diseases (col. 3, lines 54-59).

Regarding claim 21, Gonzalez-Zulueta et al teach the method of claim 13, further comprising determining one function (role in neuronal damage) of the gene (col. 38, lines 30-37).

Regarding claim 22, Gonzalez-Zulueta et al teach the method of claim 13, wherein the tissue or cell sample is collected from an organism at two or more different points in time after occurrence of an event (col. 37, lines 7-64).

Regarding claim 23, Gonzalez-Zulueta et al teach the method of claim 13, wherein the event is ischemia (col. 37, lines 7-64).

Conclusion

16. No Claims are allowed. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia B. Wilder, Ph.D. whose telephone number is (571) 272-0791. The examiner works a flexible schedule and can be reached by phone and voice mail. Alternatively, a request for a return telephone call may be emailed to cynthia.wilder@uspto.gov. Since email communications may not be secure, it is suggested that information in such request be limited to name, phone number, and the best time to return the call.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

CYNTHIA WILDER
PATENT EXAMINER
5/25/2004

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